Development of a Squid-hydrolysate-based Larval Diet and its Feeding Performance on Summer Flounder, Paralichthys dentatus, Larvae

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Locally generated squid-processing byproduct was processed into concentrated hydrolysate (22% solids, 17.3% protein, and 3.0% lipid, primarily phospholipids-Il.6% eicosapentaenoic acid/24.5% docosahexaenoic acid on a lipid weight basis). Two microparticulate diets (65% protein, 19% lipid, 7.5% carbohydrate, and 19.12 MJ/kg energy, on a dry weight basis) were prepared using squid hydrolysate (SH) and squid-herring hydrolysate as sole protein sources (73.3 and 78.65% of the whole diet, respectively). A 22-d feeding trial with summer flounder, Paralichthys dentatus, larvae of 17 d after hatch showed that the survival rate (92%) of larvae fed SH was significantly (P < 0.05) higher than those of live Artemia nauplii (81%) and a commercial diet, Proton (65%), while specific growth rates (SGR) were comparable (2.23% /d for SH and 2.86% /d for Artemia) with the lowest for Proton (1.39% /d). After switching from commercial and Artemia diets to a SH diet for 17 d following the 22-d feeding, significant improvements were seen in survival rates of postweaning larvae fed previously commercial (65.28-76.57%) and Artemia diets (81.25-89.07%).

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